Small Business Innovation Research/Small Business Tech Transfer

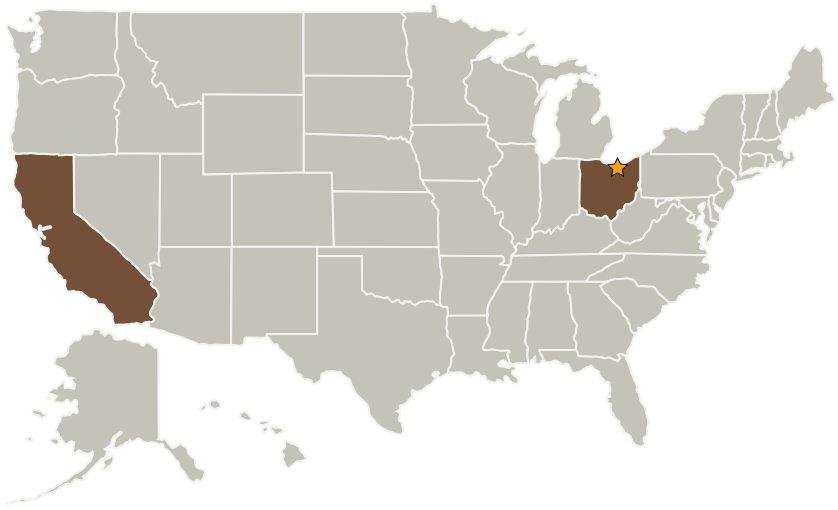
High-Performance Elastically Self-Deployed Roll-Out Solar Array (ROSA), Phase I

Completed Technology Project (2009 - 2009)

Project Introduction

Deployable Space Systems (DSS), in partnership with ATK Space and EMCORE, will focus the proposed SBIR program on the coupling of ultra-thin 33% BOL efficient multijunction solar cell flexible blanket technologies (EMCORE's IMM cell integrated to an advanced flexible blanket), to an ultra-lightweight elastically self-deployed roll-out solar array (ROSA) structural platform to produce a near-term and low-risk solar array system that provides revolutionary performance in terms of high specific power (>546 W/kg BOL), lightweight, high deployed stiffness, high deployed strength, compact stowage volume (>57 kW/m3 BOL), reliability, affordability, and rapid commercial readiness. The high-performance of an optimized ROSA solar array system with IMM technology represents incredible improvements over current state-of-the-art. The significance of the proposed effort will provide a revolutionary and positive performance impact to the end-user, and allow for the rapid insertion of this mission-enabling technology for future applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Deployable Space Systems, Inc(DSS)	Supporting Organization	Industry	Goleta, California

High-Performance Elastically Self-Deployed Roll-Out Solar Array (ROSA), Phase I

Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

High-Performance Elastically Self-Deployed Roll-Out Solar Array (ROSA), Phase I

Completed Technology Project (2009 - 2009)

Primary U.S. Work Locations	
California	Ohio

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.1 Power Generation and Energy Conversion
    - TX03.1.1 Photovoltaic